UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

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Send all comments, criticisms and contributions to the editor: T.W. Lanzatella
University Computer Center, 2520 Broadway Drive, Lauderdale, MN 55113

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NOTICE OF CHANGES TO THE SYSTEM

Tim Salo added a new terminal message and control facility to SUPIO. The console operator can now use any of the following commands:

MSG,SUPIO,command. where command is any of the following:

$$MESSAGE	issue MESSAGE to terminal
DROP$$	drop terminal
ON$$	on terminal
OFF$$	off terminal
ENABLE,P	enable port
DISABLE,P	disable port

where $$ is any legal terminal ID, P is any port and MESSAGE is any character string. If $$ is specified as **, the command pertains to all terminals. Tim also contributed a source of PP program 1RF. This program is used by BATCHIO and by SUPIO to read output queue files. We have been running a binary (with no source) of this program for about two years.

Additionally, Tim repaired a critical problem in control transfer between 1DD (the dayfile dump PP program) and PPR (PP resident). The problem was due to level 13 and was repaired before its installation. Program 1DD now always returns to the calling program rather than jumping to DFM6.

Bob Zalusky supplied the following modifications.

1. The user time limit appearing on the LIMITS report is now a decimal (rather than octal) number. Additionally, all numeric values on the LIMITS report are suffixed with an appropriate radix.

2. Program RESEQ will no longer mode-out when processing files with huge line numbers.

3. The CPMEM DMPX to a time sharing terminal no longer exceeds 73 colums and is in fact restricted to 70 columns.

4. DELAY queue output files were being reloaded with an extremely low queue priority. These files would sometimes remain in the queue for days.

5. Submit origin job parameters are now displayed correctly on the S-display.

6. USERS/DSD commands which are restricted to CSOJ/DEBUG (the C, J and K commands) are now documented as such (HELP).

7. The USERS/DSD A command now works properly if a SET had been previously executed.

Jeff Drummond repaired a catastrophic bug in CIO introduced at level 13 by CDC. When processing the EVICT function, CIO dropped all tracks starting with the current track of the specified file rather than with the first track. Any subsequent attempt to write on that file resulted in total confusion and required a recovery deadstart. This is the bug which caused us to revert to level 12 after running level 13 for four hours. Jeff also added character micros for the BELL and NULL characters to COMSTCM to be used during TELEX log-in processing. Additionally Jeff installed his proposed change to the CPM function DISSJ (see DSN 3, 5 p. 6). The SSJ= call block is now returned to the control point area if a DISSJ is executed.

Bill Elliott submitted the following modifications.

1. When level 13 was installed, the express number for certain express tapes was not being displayed.

2. RESEX now checks for a null FET name during ASSIGN processing.

3. If ID is specified on the LABEL command, LB=KU is defaulted. Bill added an informational message for users who wonder why they get parity errors reading labels as data.

4. COMSEXF was resubmitted with a documentation cleanup.

5. Bill repaired a problem in PFM which resulted from the level 13 conversion. Under certain situations, PFM issued FILE TOO LONG messages for APPEND or REPLACE commands which were otherwise legitimate. PFM was messing up a file length calculation.

6. Bill repaired a problem in which 1RI reset the queue priority of a job even if its priority exceeded MXPS.

7. Program EXAMINE has a new parameter LO (list option) which allows the selection of binary listing under OCTAL, DISPLAY, ASCII, EBCDIC and hexadecimal.

Kevin Matthews added the following modifications.

1. Kevin installed his proposed enhancement to SLL which causes the disk drivers to be stored in CM with one good disk channel thus avoiding preset code execution in a large percentage of driver loads (see DSN 3, 5 p. 3).

2. The DAYFILE utility was changed rendering the purge function illegal if a copy of the user dayfile is already present. This was a potential security problem.

3. All sector/zone code was removed throughout the system.

4. Kevin repaired an intermittent and disasterous problem in CIO in which certain control word file transfers were occasionally dropping sectors. This problem was discovered after some users reported missing data after RETAIN processing. We do not know how long this problem was in the system.

Tim Hoffmann repaired a problem in CATLIST in which the number-of-files field on the CATLIST report was garbaged if the number of files catlisted exceeded some large number.

Bill Sackett repaired a problem in PFDUMP introduced by CDC in level 13 in which direct access files with permits were dumped during an incremental dump even if the file had not been accessed/permitted since the date specified. Bill also installed that portion of DIVERT processing which administrates file routing during after-hours. A version of DVTVAL, the divert validation file (VENUS) processor was added to the system.

Jim Mundstock modified CALLPRG to output WRITEUP file usage statistics messages to the account dayfile. Jim also repaired XMIT file processing in CALLPRG to leave the retrieved file in read mode rather than write mode.

Marisa Riviere added the proposed LO=S (short list) parameter to the WRITEUP command. Marisa also changed the WRITEUP index format to a TT file so that all writeup data is contained on a single line (see DSN 3, 6 p. 3).

Don Mears contributed the following collection of modifications.

1. 61-character set processing is now faster due to a reorganization of translation tables in 1TD. This mod also adds 400 bytes of free space to 1TD.

2. CDC introduced a bug in TELEX at level 13 which rendered TELEX processing of malfunctioning hard-wired ports incorrect. Fortunately this problem was found and corrected before level 13 was installed.

3. CDC installed a bug in TELEX at level 13 which caused TELEX to mode-out whenever anyone with an initial subsystem of ASCII logged in. Unfortunately, this bug was not discovered until someone did log in with initial subsystem of ASCII during production. We reverted to a level 12 version of TELEX because of the problem.

4. Interrupting the TELEX log-in sequence caused a hung port. This was a CDC bug.

5. Interrupting the TELEX log-in sequence caused TELEX to mode-out. This was a CDC bug.

6. Entering simply C/R after *TIME LIMIT* caused a DMPX after level 13 was installed. This was changed to say ABORTED.

7. Error recovery in TELEX was changed to perform a DMD rather than a DMP.

8. Don installed one of the corrections to TELEX processing of field length recommended by the Field Length Study (Recommendation D). The RFL field length is no longer replaced by the TCFL (TELEX calculated field length).

9. Don contributed a source for the PDP-11 dump utility, DUMPPDP.

PROPOSED CHANGES TO THE SYSTEM

John Larsen proposes to assume the maintenance of COPYM, a multi-copy record/file copy utility and to move the utility from FETCH type to control card callable.

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PDP-11 Timesharing Front End Proposal - by D.W. Mears

I would like to have the PDP-11 front end support mods placed into the production system. Currently, the front end supporting binaries get sysedited in during system time deadstarts. This procedure makes it difficult to test out new versions of TELEX and 1TD. The front end support code has proven its reliability during system time testing over the last several months. The installation of this code does not mean that the PDP-11 will be used for TELEX during production time, since the EST entry for the PDP-11 will remain turned off.

Secondly, I would like to find out if there are any objections from the systems group to actually using the PDP-11 front end during production time for further testing. I understand that even if the systems group has no objections to this, the ultimate decision to use the PDP-11 during production lies with some combination of A. Franck, RLH, NLR, WRF, and LAL.

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DIVERT Proposal - by W.T. Sackett

Make DIVERT(ON/OFF,...) part of DVTVAL and change the name of DVTVAL to DIVERT.
PRO - one less entry point in the system: shortens frequently used FILES; when people ask me what program I am working on it won't sound like I have peanut butter in my mouth.
CON - DVTVAL is far larger than FILES with resulting increased overhead if DIVERT (ON/OFF) becomes popular. While DIVERT with no parameters will give an error for non-SYOT jobs as it did in the past, the K display will be requested from SYOT.

Now that the last proposal passed: DIVERT(LIMITS,SC=XX) where XX is any legal site code (e.g. EA, 24, etc.) is proposed to return all relevent site code data (except site password) to the calling program regardless of caller's site/user number.

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S-Display Proposal - by W.T. Sackett

Add system ENABLED/DISABLED information to a paged S-display so that MAGNET need not be up to set the (incomplete) info from the E,P display.

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DMD for TXOT with TT Output - by T.J. Hoffmann and J.J. Drummond

DMP is nice for dumping core for debugging, etc., but DMD is handier for reading FET's for filenames, looking through text arrays, etc. However, DMD currently is not allowed to the terminal for two reasons: 1) The output is formatted for 132-column line printer, and 2) Users tend to get logged off or line-feeded to death because the alphanumeric conversion does not check to see which characters are being printed.

Therefore, we would like to modify DMD to allow terminal users to use it by reducing the width of the output to TTY compatible size (for TELEX jobs), and replace all 00B, 67B, 66B, 76B, 74B characters with 55B (space) characters, similar to what TDUMP does.

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CPMEM Is Alive and Well and Living in Obscurity - by T.J. Hoffman and J.J. Drummond

CPMEM is the well-known(?), highly used, and often blasphemed utility for providing the errant user with the popular "EXCHANGE PACKAGE" dump. As a sidelight, it also handles calls to DMD, DMP, WBR, PBC, and a few other lesser used routines.

We would like to propose that CPMEM be made interactive for TELEX users after aborts to allow the user to decide in which format the dump should take to give the most beneficial information. This interactive I/O would occur only if the file OUTPUT is assigned to a terminal, and the call is not from a control card.

The allowable commands to CPMEM would be:

COMMAND	DESCRIPTION
ENABLE	Allow S, I, and BREAK keys to terminate/interrupt output.
DISABLE	Any attempt to interrupt will cause a jump to the input prompt.
C/R	Repeat last command.
WIDE	Format all output for line printer or Decwriter (132 character). The default would be 70 character for TTY.
END	Stop CPMEM without aborting (ENDP).
STOP	Stop CPMEM by issuing an abort (ABTP).
ABORT	Same as STOP.
HELP	Print a short description of commands (such as this).
DMD	Allow all control card forms of DMD.
DMP	Same as DMD.
WBR	Same as DMD.
PBC	Same as DMD.

The advantages are:

1. CPMEM would immediately print the error that occurred, allowing the user to decide which kind of dump would be the most useful.

2. Only the information that the user desires is printed, saving both time and paper, and giving the most informative dump possible.

3. The HELP information would be available through CPMEM itself, making external documentation less responsible for telling the user what is available.

The disadvantages are:

1. CPMEM will increase by about 500B±200B, which will affect all routines contained within CPMEM (DMD, DMP, LBC, LOC, PBC, RBR, WBR).

2. These features will be of no use for the BATCH users.

3. This feature will also tend to keep DM* files local for long periods.

SYSTEM MAINTENANCE: People and Procedures

Last Week's Systems Group Meeting - by T.W. Lanzatella

1. The following proposals were accepted or rejected.

   a. Very little was said about the Field Length report since nobody was prepared to discuss it. Several proposed changes mentioned in the report were agreed upon, however, because they pertained mostly to current bugs in the system. The items accepted were items A, B, D and E on page 18 of the report.

   b. Marisa Riviere's WRITEUP proposal was broken into three parts (see DSN 3, 6 p. 3):

      i. Everyone agreed to limit the length of writeup descriptions to 30 characters when possible. When this is not possible, the description will be printed on a second line when the report is bound for a time sharing terminal.

      ii. The WN=packagename option to be used to obtain that line of the WRITEUP index which corresponds to packagename was defeated. Instead, we chose the form WRITEUP(INDEX=packagename).

      iii. We also approved a new list option, LO=S. This parameter is valid only when writeup INDEX is requested and results in a list of only file names available via WRITEUP.

   c. The addition of SPICE as a new control card callable CALLPRG package was approved.

2. We all agreed that even in the light of the recent time management seminar the systems group meeting required no reorganization.

3. Bob Williams spoke briefly on his Preposterous Proposal (see DSN 3, 6 p. 3 and DSN 3, 6 p. 8) reiterating that it was meant strictly as food for thought.

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The Preposterous Proposal Revisited - by R.A. Williams

I have already received a number of comments on my preposterous proposal in the latest DSN. One of the most interesting observations came from Reddy who said CDC has implemented part of the proposal under NOS. The most extensive commentary came via telephone yesterday from one who will remain anonymous. Employing all of the

time management skills I recently learned, I refused to take the call with the guise of having a golf appointment. This effort was to no avail however so I accepted the call.

The criticism of my article centered on two things. First I was chastised for failing to offer suggestions for improvement in system group operation and, second, I was scolded for not listing examples of poor group decisions with regard to proposals. My response was that I did suggest shifts in the priority put on various factors that make up the analysis of new proposals and suggested that more proposals be originated by Operations and User Services. No specific examples of what I consider inappropriate proposal passages were included since I view my comments as "food for thought" which each may contemplate and judge with regard to proposals they may have made. However there were portions of the piece that were amorphous so I will expound on my statement.

The thrust of my argument is two-fold. First the source of proposed system modifications is important. Not only those who install system changes should suggest those changes. To be sure it seems that the System group is the least likely to know what the user wants and needs. Operations, User Services, and Applications staff should be encouraged to suggest system changes. User suggestion cards, Help-Line comments, and other sites' implementations should be solicited. A user poll or committee of users wouldn't be a bad idea, either to initiate change requests or review them. Perhaps the newsletter and user meetings could act as vehicles to interact with the user community.

The second major point I tried to make was that perhaps our utilization of programming resources is not optimal. I feel that even an occasional system crash that is a result of a coding error is undesirable. A situation like that which has existed over the past few months (e.g., bashed disks, failure of existing packages) with each new deadstart tape indicates to me a failure to adequately examine new mods for errors and test installed code. This means that some effort should be diverted from feature implementation to quality assurance work. Priorities are another issue. I mentioned our "bug" list which has existed in part since last August. While many of these "bugs" are not critical, are some features we have added more so? I submit that modifications to make the system more efficient and those from Operations are currently put "on the back burner" in deference to frivolous features (last week's DSN exemplifies this; look at the 1 1/2 page notice of system changes made and the 1/2 page of Operations requested changes that haven't been made). One way to correct this is by giving a priority and suggested completion to each proposal as it is accepted. Each should be assigned to a person who will implement it as well. Perhaps as bugs are discovered, they should be entered in the DSN as well and possibly a calendar of upcoming completion dates should be published.

I fully expect criticism for still failing to be specific enough in my exposition, but I don't mean to point a finger at particular System group members. I believe we should all consider my suggestions and realign our thinking if it is warranted. Thank you for your attention.

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CALLPRG and Library Tape News - by Marisa Riviere

On April 2, B. Wells installed a future version of XEDIT in the Cyber. The future version of XEDIT was previously introduced on the 6400 (see DSN 3, 5 p. 9).

On April 19, the following changes will be taking place among CALLPRG packages and Library Tape files:

J. Mundstock will be moving MIMIC (current and future) to a tape. The usage of MIMIC does not merit availability as disk files.

M. Frisch will be adding a new package, SADIE, as fetch type. SADIE is a private package that Michael is introducing for Professor Thompson of the Computer Science Department. SADIE is a user library for image processing for the Dicomed image digitizer. Michael will be also rearranging the index entries for DUAL, to assign it to K. McMahon and for PLOT31 to assign to himself.

R. Hotchkiss will be removing the index entry for SAP. SAP is replaced by SSAP.

B. Johnson will be replacing TEKLIB with a new version and placing it as a CALLPRG file instead of as a Library file.

B. Hanson will be changing PROCPFM in FT3LIB on the Library Tape and in future FORTRAN on CALLPRG. Brian will be fixing a small bug introduced when he made PROCPFM return PFM error codes.

The next modifications to the CALLPRG index and the Library Tape will take place on May 3. Requests for modifications should be submitted on or before April 27 at noon.

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Cyber 74 Deadstart Dump Analysis - by K.C. Matthews

21 March 1977 - 10 April 1977

Tuesday, 22 March

19:15 (DD-1)
Attempting to skip forward on a printer from BATCHIO caused a CPUMTR ERROR EXIT. Tim Salo is looking at the problem.

Friday, 25 March

08:55 (DD-2)
Another CPUMTR ERROR EXIT. This time a PPU was hung up trying to read via the DDP. The message CPUMTR ERROR EXIT in the B display can be misleading. It only means that word 000000 (absolute) contains a non-zero value. This cell will be non-zero when an error exit occurs, but can become non-zero as a result of other errors.

16:05 Machine powered itself down due to high temperature in chassis 1. There was a freon leak in the plumbing.

Wednesday, 30 March

09:00 ECS failed. It was repaired by the engineers quickly.

14:45 Another CPUMTR ERROR EXIT. But the dump program failed, and then a deadstart could not be completed. The engineers looked at the problem for 2 hours, and then it went away. Hopefully they found out enough to be able to really track it down when (if?) it occurs again.

Thursday, 31 March

23:36 Scopes blanked. The 6400 was also down. The engineers were called in. The master clock in the ECS controller which sends timing signals to each mainframe had failed.

Monday, 4 April

The machine was 40 minutes late coming up because of a broken wire in the console.

Tuesday, 5 April

16:45 Parity errors in ECS caused many bad roll-in files. The bad card was replaced in ECS.

Thursday, 7 April

The machine was 35 minutes late coming up due to a failing PPU.

Saturday, 9 April

02:40 (DD-10)
Another CPUMTR ERROR EXIT. This and the last error exit have not yet been closely examined. I will do this soon.

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6400 Dump Analysis - by R.A. Williams

Date	Description	Tape
770323	The scopes went blank. A chair had barely touched the console.	DDT-7
770325	The Cyber 74 powered down, causing the 6400 scopes to go blank due to dependence on the ECS clock.	Fixed
770327	The scopes went blank. The console had not been touched before this happened.	DDT-6
770329	The scopes went blank. DSD was found to be running in a loop where it could reasonably be expected.	DDT-5
770331	The 844 controller on channel 6 hung on a function time-out error. We solved the problem by pushing master clear. We also have found that another site has this trouble.	N.A.
770331	ECS powered down, causing the scopes to go blank.	Fixed
770406	The scopes went blank. Again, DSD was executing in a normally executed loop.	DDT-15
770406	1DS hung on a DTKM as the TELEX output file had been assigned to an unreserved track.	DDT-4
770407	1TA hung on an MXFM after a number of DIAL commands had been issued.	N.A.